

Mineral Industry Surveys

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ZINC IN MAY 1999

Estimated domestic mine production in April, expressed in zinc content of ore, increased by more than 6% over the previous month's production, and by nearly 14% over production in April 1998. Mine production for May was not available at the time of publication. Smelter output in May was the same as in April, but was more than 6% lower than in May 1998. Apparent consumption was about 3% higher than in April and 10% higher than a year ago.

The *Platt's Metals Week* monthly average composite price for North American Special High grade zinc increased by nearly 3% to 52.09 cents per pound in May. Compared to May of the previous year, the price declined by nearly 3% or 1.53 cents.

According to Cominco Ltd., the continued strength of the U.S. economy and the start of rebound by Asian economies will push zinc prices up in 1999 and 2000. This optimistic forecast is seconded by Brook Hunt & Associates who declared that the recent rally in zinc prices has been justified by a steady improvement in the metal's underlying fundamentals (*Mining Journal*, 1999c). Some experts worry that the recent price increase was caused by speculative purchasing by funds, banks, and institutions and is not a harbinger of future high prices. The improvement in Southeast Asia during the next 5 years is expected to be gradual. The predicted growth of about 3% will be well behind the 9% growth for the region before the start of the current economic crisis. Overall, Cominco predicted a 2.3% growth in world zinc consumption by 2000. The zinc consumption in the United States will grow about 2.2% in 1999, according to Cominco, with most of the additional zinc going for galvanizing (*American Metal Market*, 1999c). Supply and demand estimates by Metal Bulletin Research put the market at a deficit of around 25,000 tons for 1999 (*Metal Bulletin*, 1999e).

This generally optimistic outlook could be slightly tarnished by the U.S. Environmental Protection Agency's (EPA) proposal to label zinc as one of 53 persistent, bioaccumulative, and toxic (PBT) chemicals. The list of the PBT chemicals was suggested to the States and therefore it did not have to go through a

legislative review. If enough States adopt this list, EPA could define zinc as a toxin and therefore limit or even ban its use. The EPA argues that a zinc coating on a guardrail, for example, will eventually peel or flake off. Over many years, that concentration of zinc in the ground could lead to environmental contamination, although zinc in itself is not considered a toxic substance (*American Metal Market*, 1999b). According to the zinc industry, zinc has been used in many everyday applications—throat lozenges, creams and lotions, cosmetics, and dietary supplements—without any ill effects.

Discussions are continuing between Falconbridge Ltd. and the Canadian Auto Workers union (CAW) at the company's Kidd Creek Metallurgical Division near Timmins, Ontario, Canada. About 720 production and maintenance workers, out of 970 employees, belong to CAW. These are the first negotiations between the company and CAW since the work force became unionized last year. The Kidd operations consist of a mill, copper smelter and refinery, zinc plant, cadmium plant, dust treatment plant that recovers indium, copper, and zinc, and a sulfuric acid plant. Although the strike deadline is set for July 8, the preparation for closure would have to start 2-3 days before, shortening the available time for negotiations (*Metal Bulletin*, 1999c). The mill treats ore from the non-unionized Kidd Creek Mine. Annual output is about 145,000 tons of zinc and 135,000 tons of copper (*Platt's Metals Week*, 1999a). The prospect of a strike at Kidd Creek, coupled with the ongoing problems at the Tara Mine in Ireland, has benefitted zinc suppliers by lowering the supply at the time when demand is slowly increasing.

Billiton plc. and Eagle Plains Resources (of Canada) planned a joint venture to explore the North Franklin and Hap properties in the Franklin Creek area, 45 km north of Cominco's Sullivan zinc-lead mine in British Columbia. The companies reportedly hope to discover Sullivan-type zinc sedimentary-exhalative (sedex) mineralization at Franklin Creek (*Mining Journal*, 1999a).

The state-owned Empresa Minera del Centro del Peru S.A. (Centromin) approved a \$61.78 million bid by Peruvian

polymetallic producer Compañía Minera Volcán S.A. for its Cerro de Pasco operation, Peru's largest zinc-lead-silver mine, and Centromin's last major mining asset to be privatized. The acquisition will make Volcán the world's fifth-ranked zinc producer. Its combined annual production will total nearly 300,000 tons of zinc in concentrate. Volcán also assumed a 5-year, \$70 million investment commitment and \$20 million in state debt. The new owner is holding talks with Doe Run Co. to see whether Doe Run will exercise an option to buy a 30% stake in Cerro de Pasco, now renamed Minera Paragsha. Centromin workers have an option to buy a further 10% interest. Cerro de Pasco includes an open pit mine, which is to be exhausted in 4 years, leaving the mine functioning as an entirely underground operation with a 20-million-ton reserve, 2 flotation plants, and a small copper cathode plant. The underground operation has a minimum mine life of 12 years and includes 30,000 hectares of exploration properties in the central Andes, above the highland city of Cerro de Pasco. The state plans to privatize all of its remaining mining interests, including a 25% stake in Glencore International AG's Compañía Minera Iscaycruz, currently Peru's second largest zinc mine (Platt's Metals Week, 1999b). Swiss-based Glencore directly controls a 45% stake in the mine and has another 30% stake through Perubar, which is 100%-owned by Glencore. Glencore is reportedly to invest \$7 million in the Iscaycruz Mine to reduce production costs by 5%-10% and increase production to 190,000 tons of zinc concentrate in 1999 (Metal Bulletin, 1999d). Paragsha's production in 1998 was 210,309 tons of zinc in concentrate, 72,488 tons of lead in concentrate, and 227 tons of silver (Metal Bulletin, 1999f).

Expansion of the Cajamarquilla zinc refinery reportedly has been postponed until 2000 because of concerns over market conditions. The 120,000-ton expansion that would double present annual capacity was due to come on line by the end of 2000, but is now rescheduled for 2002. The refinery, located 25 kilometers east of Lima, is 81.6% owned by Cominco Ltd. of Canada, 16.7% by Marubeni Corp. of Japan, and 1.7% by its employees (Metal Bulletin, 1999a).

Cia Minera del Sur S.A. (Comsur), the current holder of the Porco Mine lease, which is to expire on June 30, was the only bidder for a new 30-year lease. Because of political opposition to Comsur's principal shareholder, ex-president Gonzalo Sánchez de Lozada, the Peruvian Government asked the state-owned Corporación Minera de Bolivia (Comibol), the owner of Porco, to try to attract new bidders to the table. Comibol formally approached a number of mining companies, which have until June 10 to present their offers to Comibol and begin negotiations. Any new operator, however, would have to pay an increased annual lease fee of \$500,000 and compensate Comsur for its lost investment in equipment, which the company says amounts to over \$18 million. Because of these initial expenditures, and because nobody else submitted an offer on two previous occasions, Comsur is expected to win the new concession

unopposed. The Porco underground mine has a 1,500-ton-per-day treatment capacity with over 4 million tons of probable reserves grading 11.2% zinc, 0.7% lead, and 107 grams per ton silver. Annual output amounts to 32,700 tons of zinc, 2,400 tons of lead, and 28 tons of silver (Metal Bulletin, 1999b).

Ireland's Ivernia West plc reported that the \$230 million Lisheen zinc-lead mine project in County Tipperary is scheduled to begin production in September of this year. The mine is expected to have a 1.5-million-ton ore capacity, producing about 340,000 tons of zinc concentrate over its 14-year life. The project is a 50:50 joint venture between Ivernia West and Minorco SA, which owns 27% of Ivernia West (Mining Journal, 1999b).

Production resumed at the Huluado Zinc Industry Co. Ltd. smelter, after, according to a company official, an assortment of necessary repairs forced China's largest zinc producer to cease operations for more than a month. According to industry rumors, Huluado ceased production because of a shortage of concentrates, as well as ongoing cash flow problems. While denying these rumors, the company urged the Chinese Government to better control exports of zinc concentrates in order to meet the demands of domestic smelters. Huluado is reportedly also ready to sign an agreement with a foreign bank to finance the imports of zinc concentrates. Planned production for this year at the Huluado's 330,000-ton-per-year smelter is between 250,000 and 280,000 tons (American Metal Market, 1999a).

References Cited

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- 1999c, Market nervous over Kidd Creek labor talks: Metal Bulletin, no. 8378, May 24, p. 9.
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- Mining Journal, 1999a, Billiton-Eagle Plains agreement: Mining Journal, v. 332, no. 8533, May 28, p. 396-397.
- 1999b, Lisheen progress: Mining Journal, v. 332, no. 8533, May 28, p. 398.
- 1999c, Zinc justification: Mining Journal, v. 332, no. 8533, May 28, p. 404.
- Platt's Metals Week, 1999a, July 8 strike deadline for Kidd plant: Platt's Metals Week, v. 70, no. 22, May 31, p. 14.
- 1999b, Volcán wins Centromin Cerro de Pasco at \$61.7-mil: Platt's Metals Week, v. 70, no. 22, May 31, p. 13.

TABLE 1
SALIENT ZINC STATISTICS 1/

(Metric tons)

	1998	1999			
	January- December p/	March	April	May	January- May
Production:					
Mine, zinc content of concentrate	755,000 r/	63,000 r/	67,000 r/	67,000 e/	323,000
Mine, recoverable zinc	722,000 r/	59,800 r/	63,900 r/	64,000 e/	307,000
Smelter, refined zinc	380,000	31,900 r/	30,100 r/	30,100	150,000
Oxide (gross weight)	153,000	11,800	11,800	11,800	60,300
Consumption:					
Refined zinc, reported	531,000	43,800 r/	40,300 r/	41,600	216,000
Ores e/ (zinc content)	1,800	150	150	150	750
Zinc-base scrap e/ (zinc content)	99,600	8,300	8,300	8,300	41,500
Copper-base scrap e/ (zinc content)	168,000	14,000	14,000	14,000	70,000
Aluminum- and magnesium-base scrap e/ (zinc content)	804	67	67	67	335
Total e/	802,000	66,300 r/	62,900 r/	64,200	328,000
Apparent consumption, metal 2/	1,290,000	119,000	114,000 r/	117,000 3/	570,000
Stocks of refined (slab) zinc, end of period:					
Producer 4/	XX	10,200 r/	9,380 r/	9,380	XX
Consumer 5/	XX	60,600 r/	62,400 r/	59,600	XX
Merchant	XX	9,920	9,450	9,340	XX
Total	XX	80,700 r/	81,200 r/	78,300	XX
Shipments of zinc metal from Government stockpile	26,000	2,800	1,650	736	10,100
Imports for consumption:					
Refined (slab) zinc	879,000	85,900	83,400	NA	326,000 6/
Oxide (gross weight)	58,900	5,750	5,080	NA	22,300 6/
Ore and concentrate (zinc content)	46,300	5,030	274	NA	25,400 6/
Exports:					
Refined (slab) zinc	2,330	47	52	NA	241 6/
Oxide (gross weight)	6,210	747	579	NA	2,380 6/
Ore and concentrate (zinc content)	552,000	2,890	12,800	NA	28,900 6/
Waste and scrap (gross weight)	35,000	2,310	2,600	NA	9,650 6/
Price:					
London Metal Exchange, average, dollars per metric ton	1,024.11	1,029.61	1,018.60	1,040.33	1,007.56
Platt's Metals Week North American Special High Grade, average, cents per pound	51.43	51.27	50.66	52.09	50.40

e/ Estimated. p/ Preliminary. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

3/ Data based on reported consumption, stocks and estimated trade data.

4/ Data from U.S. Geological Survey and American Bureau of Metal Statistics.

5/ Includes an estimate for companies that report annually.

6/ Includes data through April only.

TABLE 2
REFINED ZINC PRODUCED IN THE UNITED STATES 1/

(Metric tons)

Month	Beginning stocks 2/	Production	Shipments	Ending stocks 2/
1998:				
May	11,000	32,200	33,000	10,200
June	10,200	31,500	33,400	8,380
July	8,380	32,100	32,000	8,560
August	8,560	30,300	29,300	9,540
September	9,540	30,200	30,100	9,640
October	9,640	31,700	31,400	9,930
November	9,930	29,200	29,900	9,240
December	9,240	32,000	32,200	9,060
Year total	XX	380,000	381,000	XX
1999:				
January	9,060	30,200	29,700	9,590
February	9,590	27,700	28,900	8,360
March	8,360	31,900 r/	30,100 r/	10,200 r/
April	10,200 r/	30,100 r/	30,900	9,380 r/
May	9,380	30,100	30,100	9,380
January-May	XX	150,000	150,000	XX

r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes stocks held at locations other than smelters.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

TABLE 3
ZINC OXIDE PRODUCED IN THE UNITED STATES 1/ 2/

(Metric tons, gross weight)

Month	Beginning stocks	Production	Shipments	Ending stocks
1998:				
May	3,630	12,500	12,700	3,450
June	3,450	12,200	12,300	3,370
July	3,370	12,500	12,500	3,400
August	3,400	12,600	12,500	3,480
September	3,480	13,600	13,400	3,640
October	3,640	13,400	13,100	3,940
November	3,940	13,300	12,700	4,530
December	4,530	12,900	12,400	5,060
Year total	XX	153,000	153,000	XX
1999:				
January	5,060	12,600	12,900	4,810
February	4,810	12,400	12,900	4,270
March	4,270	11,800	11,800	4,270
April	4,270	11,800	11,800	4,270
May	4,270	11,800	11,800	4,270
January-May	XX	60,300	61,100	XX

XX Not applicable.

1/ Excludes impure zinc oxide produced from other processes.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 4
ESTIMATED DISTRIBUTION OF ZINC OXIDE
SHIPMENTS BY INDUSTRY 1/ 2/ 3/

(Metric tons, gross weight)

Industry	1998	1999			
	January- December p/	March	April	May	January- May
Agriculture	W	W	W	W	W
Ceramics	7,590	583	583	583	2,960
Chemicals	30,800	2,530	2,530	2,530	12,700
Paints	6,960	566	566	566	2,830
Photocopying	W	W	W	W	W
Rubber	101,000	7,570	7,570	7,570	40,000
Other	6,700	543	527	508	2,630
Total	153,000	11,800	11,800	11,800	61,100

p/ Preliminary. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Distribution of U.S. producers only. Imports excluded because distribution by industry cannot be distinguished

2/ May include in-house consumption.

3/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 5
APPARENT CONSUMPTION OF REFINED ZINC
ACCORDING TO INDUSTRY USE AND PRODUCT 1/

(Metric tons)

Industry and product	1998	1999			
	January- December p/	March	April	May 2/	January- May
Galvanizing:					
Sheet and strip	521,000	47,900 r/	47,400 r/	47,400	226,000
Other	185,000	18,000	17,800 r/	18,100	91,100
Total	705,000	66,000 r/	65,100	65,500	317,000
Brass and bronze	177,000	17,400	16,700 r/	16,700	83,300
Zinc-base alloy	250,000	22,700 r/	20,700 r/	20,300	107,000
Other uses 3/	157,000	12,900	11,500 r/	14,600	62,400
Grand total	1,290,000	119,000	114,000 r/	117,000	570,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data based on reported consumption, stocks and estimated trade data.

3/ Includes zinc used in making zinc dust, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, rolled zinc, and miscellaneous uses not elsewhere specified.

TABLE 6
AVERAGE MONTHLY ZINC PRICES 1/

Month	North American	LME cash	
	¢/lb.	¢/lb.	\$/m.t.
1998:			
May	53.62	48.12	1,060.76
June	51.05	45.79	1,009.45
July	52.71	47.17	1,039.82
August	52.15	46.69	1,029.43
September	50.63	45.36	1,000.00
October	47.91	42.64	940.13
November	48.99	43.85	966.83
December	48.47	43.49	958.82
January-December	51.43	46.45	1,024.11
1999:			
January	47.06	42.29	932.34
February	50.90	46.13	1,016.90
March	51.27	46.70	1,029.61
April	50.66	46.20	1,018.60
May	52.09	47.19	1,040.33
January-May	50.40	45.70	1,007.56

1/ Special High Grade.

Source: Platt's Metals Week.

TABLE 7
U.S. EXPORTS OF ZINC 1/

Material	1998		1999 2/			
	Quantity (metric tons)	Value (thousands)	April		Year to date	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	2,330	\$2,750	52	\$78	241	\$361
Ore and concentrate (zinc content)	552,000	248,000	12,800	7,990	28,900	19,700
Waste and scrap (gross weight)	35,000	27,500	2,600	2,670	9,650	8,390
Powders, flakes, and dust (zinc content)	5,530	10,500	366	635	1,490	2,890
Oxide (gross weight)	6,210	11,300	579	928	2,380	3,910
Chloride (gross weight)	1,940	1,290	353	253	1,050	753
Sulfate (gross weight)	4,380	2,780	632	378	1,760	1,080
Compounds, other (gross weight)	305	1,170	16	140	143	393

1/ Data are rounded to three significant digits.

2/ Data for the current month were not available at time of publication.

Source: Bureau of the Census.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF ZINC 1/

Material	1998		1999 2/			
	Quantity (metric tons)	Value (thousands)	April		Year to date	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	879,000	\$956,000	83,400	\$86,700	326,000	\$337,000
Ore and concentrate (zinc content)	46,300	23,700	274	51	25,400	13,700
Waste and scrap (gross weight)	29,200	15,700	2,400	1,030	6,830	3,290
Powders, flakes, and dust (zinc content)	17,600	34,000	2,300	3,780	6,560	10,700
Oxide (gross weight)	58,900	60,100	5,080	5,430	22,300	22,500
Chloride (gross weight)	1,570	1,520	136	118	684	616
Sulfate (gross weight)	10,400	5,940	1,350	1,060	3,980	2,580
Compounds, other (gross weight)	1,260	1,730	105	108	417	455

1/ Data are rounded to three significant digits.

2/ Data for the current month were not available at time of publication.

Source: Bureau of the Census.

TABLE 9
SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE
STOCKPILE 1/

(Metric tons)

Month	Beginning inventory	Shipments	Ending inventory
1998:			
May	218,000	757	217,000
June	217,000	1,010	216,000
July	216,000	2,050	214,000
August	214,000	--	214,000
September	214,000	7,290	207,000
October	207,000	1,610	205,000
November	205,000	1,200	204,000
December	204,000	5,100	199,000
Year total	XX	26,000	XX
1999:			
January	199,000	2,150	197,000
February	197,000	2,750	194,000
March	194,000	2,800	191,000
April	191,000	1,650	190,000
May	190,000	736	189,000
January-May	XX	10,100	XX

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals show

Source: Defense Logistics Agency.

TABLE 10
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY 1/

(Metric tons)

Material and country	General imports			Imports for consumption		
	1998	1999 2/		1998	1999 2/	
		April	Year to date		April	Year to date
Ore and concentrate (zinc content):						
Australia	--	--	7540	--	--	7540
Mexico	17,100	274	5,510	17,100	274	5,510
Peru	26,900	--	12,400	26,100	--	12,300
Other	3,270	--	--	3,130	--	--
Total	47,300	274	25,500	46,300	274	25,400
Blocks, pigs, or slab:						
Canada	504,000	40,700	184,000	505,000	40,700	184,000
China	52,800	11,400	22,600	52,800	11,600	22,700
Kazakhstan	27,000	3,570	9,050	27,000	3,570	9,050
Korea, Republic of	42,600	2,820	21,000	51,900	2,820	21,000
Mexico	78,000	6,610	26,500	78,000	6,610	26,500
Peru	47,800	8,600	26,100	47,800	8,600	26,100
Poland	16,100	--	4,300	16,100	--	4,300
Russia	16,400	1,720	5,960	16,400	1,720	5,960
Spain	25,700	--	--	25,700	--	--
Other	55,700	7,760	27,100	58,200	7,760	27,100
Total	866,000	83,300	326,000	879,000	83,400	326,000
Dross, ashes, & fume (content)	21,100	1,600	7,570	21,100	1,600	7,570
Grand total	934,000	85,100	359,000	946,000	85,200	359,000
Oxide (gross weight):						
Canada	33,000	2,890	12,900	33,000	2,890	12,900
China	1,890	148	792	1,890	148	792
Mexico	18,900	1,400	6,450	18,900	1,400	6,450
Netherlands	2,290	228	1,160	2,290	228	1,160
Other	2,890	418	1,050	2,880	418	1,050
Total	58,900	5,080	22,300	58,900	5,080	22,300
Other (gross weight):						
Waste and scrap	29,200	2,400	6,830	29,200	2,400	6,830
Sheets	16,200	3,470	6,310	16,900	3,470	6,310
Powders, flakes, and dust (zinc content)	17,600	2,300	6,560	17,600	2,300	6,560

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data for the current month were not available at time of publication.

Source: Bureau of the Census.